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REMARKS/ARGUMENTS

In view of the following remarks, the applicant respectfully submits that the pending claims are not anticipated under 35 U.S.C. § 102 and are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicant respectfully requests that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.

The applicant will now address each of the issues raised in the outstanding Office Action.

Objections

Claims 16, 17, 42 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 16 and 17 depend, indirectly, from claim 12, and claims 42 and 43 depend, indirectly, from claim 38. Since, however, claims 12 and 38 are allowable over the cited art for the reasons discussed below, these claims have not been rewritten in independent form at this time.

Rejections under 35 U.S.C. § 102

Claims 1, 10, 27, 36, 48 and 49 stand rejected under 35 U.S.C. § 102(b) as being anticipated by purportedly admitted prior art. The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Independent claims 1 and 27 are not anticipated by the purportedly admitted prior art because the purportedly admitted prior art does not teach the acts of (or means for) accepting status information from at least two different protocols and composing a message including the status information. In rejecting independent claims 1 and 27, the Examiner cites Figure 1 and paragraphs [0004]-[0007], [0015] and [0025] of the present specification as admitted prior art which teaches the aforementioned features of claims 1 and 27. The applicant respectfully disagrees.

Figure 1 of the present application generally illustrates two neighboring nodes, each of which may support two protocols. In addition, paragraphs [0004]-[0011] of the present application generally describe conventional "liveness detection mechanisms" **and their deficiencies which the claimed invention addresses**. Specifically, as the specification states:

First, routers often implement multiple routing protocols, **each having its own liveness detection mechanism**.

Consequently, updating each routing protocol to enable fast detection can lead to a considerable amount of work. Second, hello messages [in conventional liveness detection mechanisms] often carry more than just liveness

information, and can therefore be fairly large and require non trivial computational effort to process. Consequently, running fast liveness detection between a pair of neighbor nodes, each running multiple protocols, can be expensive in terms of communications and computational resources required to communicate and process the frequent, lengthy messages for liveness detection. [Emphasis added.]

(Paragraph [0009] of the present application) As can be appreciated from the foregoing, while the purportedly admitted prior art describes a conventional liveness detection mechanism between two neighboring nodes, each of which nodes may support multiple protocols, it clearly indicates that conventional liveness detection mechanisms are limited in that they each **have their own liveness detection mechanism**. That is, nodes which support multiple protocols send status messages **for each protocol supported (i.e., not a single aggregated status message)**.

By contrast, and in view of these deficiencies, the claimed invention provides a method of determining the liveness of routing protocols using a mechanism to **aggregate liveness information for the protocols in a (single) status message**. Since (a) liveness information for multiple protocols, (b) the liveness of interfaces, and (c) the forwarding capability of interfaces may be aggregated in a (single) message, the message can be sent more often than could individual messages for each of the multiple protocols. This allows fast detection of failures, and sending connectivity messages for the individual protocols, such as neighbor "hellos," to be

sent less often. (See Abstract of the present application.)

Thus, as can be appreciated from the foregoing, the purportedly admitted prior art does not teach (e.g., a liveness detection mechanism) accepting status information from at least two different protocols (e.g., which indicates whether the at least two protocols are up, down, not responding, or restarting) and composing a message including the status information from the at least two different protocols. Thus, independent claims 1 and 27 are not anticipated by the purportedly admitted prior art for at least this reason. Since claims 10, 48 and 49 depend from claim 1, and since claim 36 depends from claim 27, these claims are similarly not anticipated by the purportedly admitted prior art.

Claims 1, 10, 19, 27, 36, 45, 48 and 49 stand rejected under 35 U.S.C. § 102(b) as being anticipated by David Comer, "Internetworking with TCP/IP," (2000) Prentice Hall (pub) ("the Comer book"). The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Independent claims 1 and 27 are not anticipated by the Comer book because the Comer book does not teach the acts of (or means for) accepting status information from at least two different protocols and composing a message including the status information. In rejecting independent claims 1 and 27, the Examiner contends sections 15.10 and 15.16 of the Comer book "discloses determining at a first node status information for both BGP and TCP protocols" which teaches "accepting status

information from at least two different protocols." (See Paper No. 20080226, page 4.) In addition, the Examiner contends sections 15.10 and 15.16 of the Comer book "discloses composing a keepalive message including the status information" and therefore teaches "composing a message including the status information." (See Paper No. 20080226, page 4.) The applicant respectfully disagrees.

The sections of the Comer book cited by the Examiner generally describe the use of BGP ("Border Gateway Protocol"). Although the Comer book states that BGP **uses** TCP for transport of KEEPALIVE messages, this does not teach a method accepting **status information** (which may, for example, include a protocol state selected from a group of protocols states consisting of (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting) from at least two different protocols and then composing **a (single) message** including the status information from the at least two different protocols. Specifically, the Comer book provides:

Two BGP peers periodically exchange KEEPALIVE messages to test network connectivity and to verify that both peers continue to function. A KEEPALIVE message consists of the standard message header **with no additional data**. Thus, the total message size is 19 octets (the minimum BGP message size). [Emphasis added.]

(Section 15.16 of the Comer book.) Furthermore, the Comer book describes the BGP message header in Figure 15.6 and states that the 19-octet minimum BGP message size includes a 16-octet MARKER field, a 2-octet LENGTH

field, and a 1-octent TYPE field. None of these three fields included in a KEEPALIVE message include status information of any protocol, let alone of at least two different protocols (BGP and TCP IP as alleged by the Examiner).

Thus, as can be appreciated from the foregoing, the Comer book does not teach (e.g., a liveness detection mechanism) accepting *status information from at least two different protocols* (e.g., which indicates whether the at least two protocols are up, down, not responding, or restarting) and composing a message including the status information from the at least two different protocols. Thus, independent claims 1 and 27 are not anticipated by the Comer book for at least this reason. Independent claims 12 and 45 are similarly not anticipated by the Comer book. Since claims 10, 48 and 49 depend from claim 1, and since claim 36 depends from claim 27, these claims are similarly not anticipated by the Comer book.

Rejections under 35 U.S.C. § 103

Claims 2-9, 11, 28-35 and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over purportedly admitted prior art and further in view of Sandick, et al., "Internet-Draft Fast Liveness Protocol," (February 2000) ("the Sandick paper"). The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Claims 2-9 and 11 depend, either directly or indirectly, from claim 1, claims 28-35 and 37 depend, either directly or indirectly, from claim 27. As such, these claims are not rendered obvious by the purportedly

admitted prior art and the Sandick paper since the purported teachings of the Sandick paper would not compensate for the deficiencies of the purportedly admitted prior art with respect to claims 1 and 27 discussed above, regardless of the scope of the purported teachings of the Sandick paper, and regardless of the presence or absence of an obvious reason to combine these references. Consequently, claims 2-9, 11, 28-35 and 37 are not rendered obvious by the cited references for at least the reasons discussed above with reference to claims 1 and 27.

Claims 2-9, 11-15, 20-26, 28-35, 37-41, 46 and 47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Comer book and further in view of the Sandick paper. The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Claims 2-9, 11, 20, 21, 28-35, 37, 46 and 47

Claims 2-9 and 11 depend, either directly or indirectly, from claim 1, claims 20 and 21 depend from claim 19, claims 28-35 and 37 depend, either directly or indirectly, from claim 27, and claims 46 and 47 depend, either directly or indirectly, from claim 45. As such, these claims are not rendered obvious by the Comer book and the Sandick paper since the purported teachings of the Sandick paper would not compensate for the deficiencies of the Comer book with respect to claims 1, 19, 27 and 45 discussed above, regardless of the scope of the purported teachings of the Sandick paper, and regardless of the presence or absence of an obvious

reason to combine these references. Consequently, claims 2-9, 11, 13-15, 20, 21, 28-35, 37, 46 and 47 are not rendered obvious by the cited references for at least the reasons discussed above with reference to claims 1, 19, 27 and 45.

Claims 12-15, 22-26 and 38-41

Independent claims 12 and 38 are not rendered obvious by the Comer book and the Sandick paper since the cited references do not teach or suggest the act of (or means for) receiving a message including, for a first set of at least two different protocols of a neighbor node, status information for each of the protocols of the first set.

For similar reasons discussed above with respect to claims 1 and 27, the Comer book does not teach or suggest the use of a single status message which includes the status of each of at least two different protocols. Furthermore, the purported teachings of the Sandick paper do not compensate for the deficiencies of the Comer book with respect to these claims. Thus, claims 12 and 38 are not rendered obvious by the cited references for at least these reasons. Independent claim 22 is similarly not rendered obvious by the cited references. Since claims 13-15 directly or indirectly depend from claim 12, since claims 23-26 directly or indirectly depend from claim 22, and since claims 39-41 directly or indirectly depend from claim 38, these claims are similarly not rendered obvious by the cited references.

Claims 18 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Comer book, the

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Sandwick paper and further in view of U.S. Patent No. 5,349,642 ("the Kingdon patent"). The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Claim 18 indirectly depends from claim 12, and claim 44 indirectly depends from claim 38. As such, these claims are not rendered obvious by the Comer book, the Sandick paper, and the Kingdon patent since the purported teachings of the Kingdon patent would not compensate for the deficiencies of the Comer book and the Sandick paper with respect to claims 12 and 38, discussed above, regardless of the scope of the purported teachings of the Kingdon patent, and regardless of the presence or absence of an obvious reason to combine these references. Consequently, claims 18 and 44 are not rendered obvious by the cited references for at least the reasons discussed above with reference to claims 12 and 38.

Conclusion


In view of the foregoing remarks the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicant requests that the Examiner pass this application to issue.

Any arguments made in this request for reconsideration pertain **only** to the specific aspects of the invention **claimed**. Any arguments are made **without prejudice to, or disclaimer of**, the applicant's right to seek patent protection of any unclaimed (e.g., narrower, broader, different) subject matter, such as by way of a

continuation or divisional patent application for
example.

Respectfully submitted,

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